

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler for cooling the organic electroluminescence element.

Claim 2 (Currently Amended) The image forming apparatus according to Claim 1, wherein the ~~cooling means~~ cooler comprises at least one of a ~~Peltier~~ Peltier element, a fan and a fin.

Claim 3 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler constituted by a fan for cooling the organic electroluminescence element;

wherein the fan is attached at a position capable of blowing a wind in a direction substantially orthogonal to a longitudinal direction of the ~~exposing means~~ device.

Claim 4 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler comprising a ~~Peltiert~~ Peltier element for cooling the organic electroluminescence element;

wherein the ~~cooling means~~ cooler cools any of faces excluding at least a luminescent face of the organic electroluminescence element.

Claim 5 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

a cooling medium pipe for transporting a cooling medium for cooling the organic electroluminescence element along a vicinity of the organic electroluminescence element.

Claim 6 (Currently Amended) The image forming apparatus according to Claim 1, further comprising:

a temperature sensor for detecting a temperature of the ~~exposing means~~ exposing device; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler when the temperature of the ~~exposing means~~ exposing device detected by the temperature sensor ~~becomes out of~~ exceeds a predetermined temperature.

Claim 7 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler for cooling the organic electroluminescence element;

a temperature sensor for detecting a temperature of the exposure head; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler when a temperature of the exposure head detected by the temperature sensor ~~becomes out of~~ exceeds a predetermined temperature;

wherein the ~~controlling means~~ controller controls the ~~cooling means~~ cooler to cool the ~~exposing means~~ exposing device to an environmental temperature in a steady state equal to or lower than a crystallizing temperature of an organic substance provided by the organic electroluminescence element.

Claim 8 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler including at least one of a ~~Peltier~~ Peltier element, a fan and a fin for cooling the organic electroluminescence element;

a temperature sensor for detecting a temperature of the ~~exposing means~~ exposing device; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler when the temperature of the ~~exposing means~~ exposing device detected by the temperature sensor ~~becomes out of~~ exceeds a predetermined temperature.

Claim 9 (Currently Amended) The image forming apparatus according to Claim 8, wherein the ~~controlling means~~ controller controls the ~~cooling means~~ cooler to cool the ~~exposing means~~ exposing device to an environmental temperature in a steady state equal to or lower than a crystallizing temperature of an organic substance provided by the organic electroluminescence element.

Claim 10 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler for cooling the organic electroluminescence element;

a temperature sensor for detecting a temperature of the exposure head; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler when the temperature of the ~~exposing means~~ exposing device detected by the temperature sensor ~~becomes out of~~ exceeds a predetermined temperature;

wherein the ~~controlling means~~ controller sets a ~~width~~ range of varying the temperature of the ~~exposing means~~ exposing device to an environmental temperature $\pm 20^{\circ}\text{C}$ in a steady state.

Claim 11 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler for cooling the organic electroluminescence element;

a light amount sensor for detecting ~~a light~~ an amount of light irradiated from the organic electroluminescence element; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler when the light amount of the light detected by the light amount sensor becomes equal to or smaller than a predetermined amount.

Claim 12 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler for cooling the organic electroluminescence element;

a darkness sensor for detecting a darkness of the toner image; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler when the darkness of the toner image detected by the darkness sensor becomes equal to or smaller than a predetermined darkness.

Claim 13 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler for cooling the organic electroluminescence element;

a temperature sensor for detecting a temperature of the ~~exposing means~~ exposing device;

a light amount sensor for detecting ~~a light~~ an amount of light irradiated from the organic electroluminescence element;

a darkness sensor for detecting a darkness of the toner image; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler based on an output of one of the temperature sensor, ~~or~~ the light amount sensor ~~or~~ and the darkness sensor;

wherein the ~~controlling means~~ controller controls a current supplied to the organic electroluminescence element such that a luminescent light amount of the organic electroluminescence element become constant based on information from one of the temperature sensor, the light amount sensor, ~~or~~ and the darkness sensor.

Claim 14 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler for cooling the organic electroluminescence element; and

~~controlling means~~ a controller for controlling the ~~cooling means~~ cooler for uniformly controlling a temperature of an inside of a head such that a difference in a light amount of each pixel at the inside of the head of the exposing ~~means~~ device becomes equal to or smaller than $\pm 14\%$.

Claim 15 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence member having a plurality of ~~pieces of~~ luminescent units between a pair of an anode and a cathode opposed to each other;

wherein the luminescent unit constituting the organic electroluminescence element is constituted by combining a unit in which a light amount of each luminescent unit is increased relative to a temperature and a unit in which the light amount of the luminescent unit is reduced relative to the temperature.

Claim 16 (Currently Amended) The image forming apparatus according to Claim 15, further comprising ~~cooling means~~ a cooler for cooling the organic electroluminescence element constituting the ~~exposing means~~ exposing device.

Claim 17 (Currently Amended) The image forming apparatus according to Claim 15, further comprising:

~~cooling means~~ a cooler for cooling the organic electroluminescence element;
a temperature sensor for detecting a temperature of the exposure head; and

~~controlling means~~ a controller for operating the ~~cooling means~~ cooler when the temperature of the ~~exposing means~~ exposing device detected by the temperature sensor ~~becomes out of~~ exceeds a predetermined temperature.

Claim 18 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an organic electroluminescence element having an anode for injecting a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board; and

~~cooling means~~ a cooler provided ~~arranged with~~ a heat radiating sheet for cooling the organic electroluminescence element constituting the ~~exposing means~~ exposing device.

Claim 19 (Currently Amended) The image forming apparatus according to Claim 18, wherein the ~~cooling means~~ cooler cools any of faces excluding at least a luminescent face of the organic electroluminescence element constituting the ~~exposing means~~ exposing device.

Claim 20 (Currently Amended) An image forming apparatus comprising:

~~exposing means~~ an exposing device including an electroluminescence element including at least an anode for injection a hole, a luminescent layer having a luminescent region and a cathode for injecting an electron on a board;

wherein the organic electroluminescence element is cooled by using ~~cooling means~~ a cooler constituting a liquid ~~medium by a liquid~~.